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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,329	07/09/2001	Terry L. Cole	2000.053500	6034
23720	7590	09/22/2006	EXAMINER	
WILLIAMS, MORGAN & AMERSON 10333 RICHMOND, SUITE 1100 HOUSTON, TX 77042			MOORTHY, ARAVIND K	
			ART UNIT	PAPER NUMBER
			2131	

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/901,329	COLE ET AL.	
	Examiner	Art Unit	
	Aravind K. Moorthy	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

1. This is in response to the appeal brief filed on 30 June 2006.
2. Claims 1-19 are pending in the application.
3. Claims 1-19 have been rejected.

***Response to Arguments***

4. In view of the appeal brief filed on 30 June 2006, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**5. Claims 1-10, 15-17 and 19 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10, 16-18 and 20 of U.S. Patent No. 6,985,519 B1 in view of Applied Cryptography (hereinafter Schneier).**

As to claim 1, Barnes et al discloses a communications system, comprising:

a physical layer hardware unit adapted to communicate data over a communications channel, the physical layer hardware unit being adapted to receive unencrypted control codes and user data over the communications channel and transmit an upstream data signal over the communications channel based on the control codes [column 8 line 64 to column 9 line 3]; and

a processing unit adapted to execute a software driver for interfacing with the physical layer hardware unit, the software driver including program instructions for implementing a protocol layer to decrypt the user data and provide the upstream data to the physical layer hardware unit [column 9, lines 4-9].

Barnes et al does not teach that the user data is encrypted.

Schneier teaches encryption and its benefits [pages 1-2].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Barnes et al so that the user data would have been encrypted.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Barnes et al by the teaching of Schneier because encryption provides authentication, integrity and nonrepudiation [page 2].

As to claim 2, Barnes et al teaches that the control codes includes at least one of a power level assignment, a frequency assignment, and a time slot assignment [column 9, lines 10-12].

As to claim 3, Barnes et al teaches that the physical layer hardware unit includes:

an analog front end adapted to sample a received signal over the communications channel to generate received signal samples [column 9, lines 15-16];

a downconverter adapted to process the received signal samples to generate a carrierless waveform including the user data [column 9, lines 17-20];  
and

a demodulator adapted to demodulate the received signal samples to generate the control codes [column 9, lines 21-22].

As to claim 4, Barnes et al teaches that the physical layer hardware unit includes control logic adapted to receive the control codes and configure the downconverter based on the control codes [column 9, lines 23-26].

As to claim 5, Barnes et al teaches that the control codes includes at least one of a power level assignment, a frequency assignment, and a time slot assignment [column 9, lines 27-29].

As to claim 6, Barnes et al teaches that the physical layer hardware unit includes:

an upconverter adapted to receive the upstream data and generate an upstream digital signal, wherein the analog front end unit is further adapted to receive the upstream digital signal and generate the upstream data signal [column 9, lines 32-36]; and

control logic adapted to receive the control codes and configure the upconverter based on the control codes [column 9, lines 37-39].

As to claim 7, Barnes et al teaches that the processing unit comprises a computer [column 9, lines 40-41].

As to claim 8, Barnes et al teaches that the computer includes:

a processor complex adapted to execute the program instructions in the software driver [column 9, lines 43-44];

a bus coupled to the processor complex [column 9, line 45]; and

an expansion card coupled to the bus, the expansion card including the physical layer hardware [column 9, lines 46-47].

As to claim 9, Barnes et al discloses a modem, comprising a physical layer hardware unit adapted to communicate data over a communications channel, the physical layer hardware unit being adapted to receive unencrypted control codes and user data over the communications channel and transmit an upstream data signal over the communications channel based on the control codes [column 9, lines 48-54].

Barnes et al does not teach that the user data is encrypted.

Schneier teaches encryption and its benefits [pages 1-2].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Barnes et al so that the user data would have been encrypted.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Barnes et al by the teaching of Schneier because encryption provides authentication, integrity and nonrepudiation [page 2].

As to claim 10, Barnes et al teaches that the control codes includes at least one of a power level assignment, a frequency assignment, and a time slot assignment [column 9, lines 55-57].

As to claim 15, Barnes et al discloses a method for configuring a transceiver, comprising:

receiving unencrypted control codes over a communications channel  
[column 10, line 30];

receiving user data over the communications channel [column 10, lines  
31-32]; and

transmitting an upstream signal over the communications channel based on transmission assignments defined by the control codes [column 10, lines 34-36].

Barnes et al does not teach that the user data is encrypted.

Schneier teaches encryption and its benefits [pages 1-2].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Barnes et al so that the user data would have been encrypted.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Barnes et al by the teaching of Schneier because encryption provides authentication, integrity and nonrepudiation [page 2].

As to claim 16, Barnes et al teaches that transmitting the upstream signal comprises transmitting the upstream signal based on at least one of a power level assignment, a frequency assignment, and a time slot assignment [column 10, lines 37-40].

As to claim 17, Barnes et al teaches that the physical layer hardware unit includes:

sampling a received signal over the communications channel to generate received signal samples [column 10, lines 42-43];

downconverting the received signal samples to generate a carrierless waveform including the user data [column 10, lines 44-47]; and

demodulating the received signal samples to generate the control codes [column 10, lines 48-49].



As to claim 19, Barnes et al discloses a modem, comprising:

means for receiving unencrypted control codes over a communications channel [column 10, lines 55-56];

means for receiving user data over the communications channel [column 10, lines 53-54]; and

means for transmitting an upstream signal over the communications channel based on transmission assignments defined by the control codes [column 10, lines 60-62].

Barnes et al does not teach that the user data is encrypted.

Schneier teaches encryption and its benefits [pages 1-2].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Barnes et al so that the user data would have been encrypted.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Barnes et al by the teaching of Schneier because encryption provides authentication, integrity and nonrepudiation [page 2].

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**6. Claims 1-14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petty U.S. Patent No. 5,784,633 in view of Schneier.**

As to claim 1, Petty discloses a communications system, comprising:

a physical layer hardware unit adapted to communicate data over a communications channel, the physical layer hardware unit being adapted to receive unencrypted control codes [column 9, lines 31-54] and user data [column 8 line 56 to column 9 line 9] over the communications channel and transmit an upstream data signal over the communications channel based on the control codes [column 9, lines 55-67]; and

a processing unit adapted to execute a software driver for interfacing with the physical layer hardware unit, the software driver including program instructions for implementing a protocol layer to decrypt the user data and provide the upstream data to the physical layer hardware unit [column 10, lines 1-27].

Petty does not teach that the user data is encrypted.

Schneier teaches encryption and its benefits [pages 1-2].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Petty so that the user data would have been

encrypted. The software driver would have included instructions for implementing a protocol layer to decrypt the data and provide the upstream data to the physical layer hardware unit.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Petty by the teaching of Schneier because encryption provides authentication, integrity and nonrepudiation [page 2].

As to claim 2, Petty teaches that the control codes includes at least one of a power level assignment, a frequency assignment, and a time slot assignment [column 6 line 58 to column 7 line 31].

As to claim 3, Petty teaches that the physical layer hardware unit includes:

an analog front end adapted to sample a received signal over the communications channel to generate received signal samples [column 11 line 65 to column 12 line 48];

a downconverter adapted to process the received signal samples to generate a carrierless waveform including the user data [column 11 line 65 to column 12 line 48]; and

a demodulator adapted to demodulate the received signal samples to generate the control codes [column 11 line 65 to column 12 line 48].

As to claim 4, Petty teaches that the physical layer hardware unit includes control logic adapted to receive the control codes and configure the downconverter based on the control codes [column 11 line 65 to column 12 line 48].

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As to claim 5, Petty teaches that the control codes includes at least one of a power level assignment, a frequency assignment, and a time slot assignment [column 6 line 58 to column 7 line 31].

As to claim 6, Petty teaches that the physical layer hardware unit includes:

an upconverter adapted to receive the upstream data and generate an upstream digital signal, wherein the analog front end unit is further adapted to receive the upstream digital signal and generate the upstream data signal [column 6 line 58 to column 7 line 31]; and

control logic adapted to receive the control codes and configure the upconverter based on the control codes [column 6 line 58 to column 7 line 31].

As to claim 7, Petty teaches that the processing unit comprises a computer [column 5, lines 34-61].

As to claim 8, Petty teaches that the computer includes:

a processor complex adapted to execute the program instructions in the software driver [column 6, lines 27-51];

a bus coupled to the processor complex [column 6, lines 27-51]; and

an expansion card coupled to the bus, the expansion card including the physical layer hardware [column 6, lines 27-51].

As to claim 9, Petty discloses a modem, comprising a physical layer hardware unit adapted to communicate data over a communications channel [column 6, lines 27-51], the physical layer hardware unit being adapted to receive unencrypted control codes [column 9, lines 31-54] and user data [column 8 line 56 to column 9 line 9] over the communications channel and

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transmit an upstream data signal over the communications channel based on the control codes [column 9, lines 31-54].

Petty does not teach that the user data is encrypted.

Schneier teaches encryption and its benefits [pages 1-2].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Petty so that the user data would have been encrypted.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Petty by the teaching of Schneier because encryption provides authentication, integrity and nonrepudiation [page 2].

As to claim 10, Petty teaches that the control codes includes at least one of a power level assignment, a frequency assignment, and a time slot assignment [column 6 line 58 to column 7 line 31].

As to claim 11, Petty discloses that the physical layer hardware unit includes:

an analog front end adapted to sample a received signal over the communications channel to generate received signal samples [column 11 line 65 to column 12 line 48];

a downconverter adapted to process the received signal samples to generate a carrierless waveform including the user data [column 11 line 65 to column 12 line 48]; and

a demodulator adapted to demodulate the received signal samples to generate the control codes [column 11 line 65 to column 12 line 48].

As to claim 12, Petty discloses that the physical layer hardware unit includes control logic adapted to receive the control codes and configure the downconverter based on the control codes [column 11 line 65 to column 12 line 48].

As to claim 13, Petty discloses that the control codes includes at least one of a power level assignment, a frequency assignment, and a time slot assignment [column 6 line 58 to column 7 line 31].

As to claim 14, Petty discloses that the physical layer hardware unit includes:

an upconverter adapted to receive the upstream data and generate an upstream digital signal, wherein the analog front end unit is further adapted to receive the upstream digital signal and generate the upstream data signal [column 6 line 58 to column 7 line 31]; and

control logic adapted to receive the control codes and configure the upconverter based on the control codes [column 6 line 58 to column 7 line 31].

As to claim 19, Petty discloses a modem, comprising:

means for receiving unencrypted control codes over a communications channel [column 9, lines 31-54];

means for receiving user data over the communications channel [column 8 line 56 to column 9 line 9]; and

means for transmitting an upstream signal over the communications channel based on transmission assignments defined by the control codes [column 9, lines 31-54].

Petty does not teach that the user data is encrypted.

Schneier teaches encryption and its benefits [pages 1-2].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Petty so that the user data would have been encrypted.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Petty by the teaching of Schneier because encryption provides authentication, integrity and nonrepudiation [page 2].

**7. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi U.S. Patent No. 5,953,324 in view of Schneier.**

As to claim 15, Adachi discloses a method for configuring a transceiver, comprising:

receiving unencrypted control codes over a communications channel  
[column 10, line 24-37];

receiving user data over the communications channel [column 10, lines  
38-55]; and

transmitting an upstream signal over the communications channel based  
on transmission assignments defined by the control codes [column 10, line 24-  
37].

Adachi does not teach that the user data is encrypted.

Schneier teaches encryption and its benefits [pages 1-2].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Adachi so that the user data would have been encrypted.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Adachi by the teaching of Schneier because encryption provides authentication, integrity and nonrepudiation [page 2].

As to claim 16, Adachi teaches that transmitting the upstream signal comprises transmitting the upstream signal based on at least one of a power level assignment, a frequency assignment, and a time slot assignment [column 10, line 24-37].

As to claim 17, Adachi teaches that the physical layer hardware unit includes:

sampling a received signal over the communications channel to generate received signal samples [column 10, line 24-37];

downconverting the received signal samples to generate a carrierless waveform including the user data [column 10, line 24-37]; and

demodulating the received signal samples to generate the control codes [column 10, line 24-37].

As to claim 18, Adachi teaches that the physical layer hardware unit includes control logic adapted to receive the control codes and configure the downconverter based on the control codes [column 10, line 24-37].



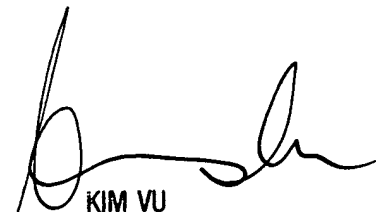
*Conclusion*

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aravind K. Moorthy whose telephone number is 571-272-3793. The examiner can normally be reached on Monday-Friday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Aravind K Moorthy  
September 15, 2006



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